



**Tensar Case Study** Ref 192

**Tensartech GreenSlope System  
Housing Development, Delves  
Lane, Consett, Co Durham,  
UK, 2006**



Tensar Case Study

#### BENEFITS TO CLIENT

A durable yet cost effective retaining solution was chosen which was sympathetic with the beautiful valley location. Site won processed material was used as backfill and quick installation enabled building to commence at an earlier stage for the 250 housing units.

#### THE PROBLEM

The site was to be raised some 4-5m and required a retaining wall overlooking a valley and fields. The client had originally specified a timber crib solution, however because of the natural beauty of the location it was decided that a green solution should be considered. With low cost being a key issue, alternative solutions were considered.

#### THE SOLUTION

The Tensartech GreenSlope system combined with a Tensartech TW1 Wall System provided the client with an attractive low maintenance retaining wall solution. Tensar International was able to offer a full design and supply solution along with a huge cost saving.

## PROJECT DESCRIPTION

Overlooking the Derwent Valley, this 'out of town' development of 250 housing units, built by Yuill homes of Hartlepool was to benefit from outstanding views and natural green valleys. To raise the levels of the site the client required an attractive, cost-effective retaining wall on the south side of the development. They wanted a 'green' solution that would blend in with the natural beauty of the Derwent Valley.

The Tensar *TR2* Wall System was selected. This consists of Tensar uniaxial geogrid firmly connected, via simple bar and bodkin to steel mesh panels. In this project the selected face panels were inclined at 70° to the horizontal. No formal foundation footing is required. As the structure was designed for 120 years design life, the steel panels were galvanised.

To prevent the fill escaping through the apertures of the steel mesh panel a selected Tensar geosynthetic face liner was used. This had an open porous structure compatible with hydro seeding, yet retain the topsoil veneer and subsequently allow vegetation to grow through these openings.

At the south/west side of the retaining wall a Tensar *TW1* Wall System was used to hide 2 large concrete inspection chambers which extended beyond the line of the slope.

The backfill was site won granular material, which was processed on site by sub-contractor John Hellens and used throughout both the modular wall and the *TR2* structure. The *TR2* system can accommodate most site won soils as backfill and so, as was the case here, can allow substantial cost savings to be achieved.



The black geosynthetic face liner retains the topsoil veneer prior to the vegetation getting established.



The *TR2* system needs very little temporary support.

This project has also received the CECA (Civil Engineering Contractors Association) North East Project of the year 2006 award .



## CONTRACT DETAILS

**Consultant:**  
White Young Green

**Sub-Consultant:**  
John Hellens Contracts

**Wall Sub-Contractor:**  
PC Construction

**Client:**  
Yuill homes



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